

UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Jori ARRAKOSKI, et al.
Application Serial No.: 10/089,326
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Title : MULTILAYER TELECOMMUNICATIONS NETWORK
Art Unit : 2616
Examiner : Juh Yih Shue
Customer No. : **43829**

Commissioner for
Patents
P.O. Box 1450
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August 17, 2007

AMENDMENT

Sir:

Applicants hereby submit an Amendment in response to the Office Action dated May 17, 2007. Please amend the application as follows:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 12 of this paper.

IN THE CLAIMS:

Please amend the claims such that the claims read in accordance with the following listing of claims:

AMENDED CLAIMS:

36. (Currently Amended) A communications system comprising:

a first network comprising a plurality of first network subscriber units and a first network sink node unit configured to wirelessly communicate with the first network subscriber units; and

a second network geographically at least partly overlapping the first network and comprising a plurality of second network subscriber units and a second network sink node unit configured to wirelessly communicate with the second network subscriber units; and

a dedicated connection between the first network sink node unit and a second network unit configured to communicate in the second network, whereby one of the a first network subscriber units is configured to be provided with a communication path via the first network sink node unit to said second network unit.

37. (Previously Presented) A communications system as claimed in claim 36, wherein wireless communication in the first network is independent of wireless communication in the second network.

38. (Previously Presented) A communications system as claimed in claim 37, wherein wireless communication in the first network is in a different frequency band from wireless communication in the second network.

39. (Previously Presented) A communications system as claimed in claim 38, wherein the first network comprises a plurality of first network sink node units with which the first network subscriber units are configured to wirelessly communicate.

40. (Currently Amended) A communications system as claimed in claim 39, comprising a plurality of ~~dedicated~~ connections, each ~~dedicated~~ connection being between a respective first network sink node unit and a respective second network unit whereby a one of the first network subscriber units is configured to be provided with a communication path via the respective first network sink node to respective second network unit.

41. (Currently Amended) A communications system as claimed in claim 40, comprising:

a third network geographically overlapping the second network and comprising a plurality of third network subscriber units and a third network sink node unit configured to wirelessly communicate with the primary third network unit; and a ~~dedicated~~-connection between a the second network sink node unit and a third network unit capable of communication in the third network, whereby a one of the second network subscriber units is configured to be provided with a communication path via the second network sink node unit to another third network unit.

42. (Previously Presented) A communications system as claimed in claim 41, wherein wireless communication in the first network and in the second network is independent of wireless communication in the third network.

43. (Previously Presented) A communications system as claimed in claim 42, wherein wireless communication in the first network and in the second network is in a different frequency band from wireless communication in the third network.

44. (Previously Presented) A communications system as claimed in claim 43, wherein the second network comprises a plurality of second network sink node units with which the second network subscriber units are configured to wirelessly communicate.

45. (Currently Amended) A communications system as claimed in claim 44, comprising a plurality of a dedicated connections, each dedicated connection being between a respective second network sink node unit and a respective third network unit whereby a one of the second network subscriber units is configured to be provided with a communication path via the respective second network sink node to a respective third network unit.

46. (Previously Presented) A communications system as claimed in claim 36, wherein the said communication is data communication.

47. (Previously Presented) A communications system as claimed in claim 46, wherein the said communication is packet data communication.

48. (Previously Presented) A communications system as claimed in claim 36, wherein the said communication uses an internet protocol.

49. (Previously Presented) A communications system as claimed in claim 36, wherein the said communication in the first network is radio communication.

50. (Previously Presented) A communications system as claimed in claim 36, wherein the said communication in the second network is radio communication.

51. (Previously Presented) A communications system as claimed in claim 42, wherein the said communication in the third network is radio communication.

52. (Currently Amended) A communications unit for operation in a communications system including a first network comprising a plurality of first network subscriber units; and a second network geographically at least partly overlapping the first network and comprising a plurality of second network subscriber units and a second network sink node unit configured to wirelessly communicate with the second network subscriber units; wherein the communications unit is operable as a first network sink node unit

configured to wirelessly communicate with the first network subscriber units, and further comprises a dedicated connection to a second network unit capable of communication in the second network, whereby a one of the first network subscriber units may be provided with a communication path via the communications unit to the another second network unit.

53. (Currently Amended) A method for providing a communication path in a communications system comprising: a first network comprising a plurality of first network subscriber units and a first network sink node unit configured to wirelessly communicate with the first network subscriber units; and a second network geographically at least partly overlapping the first network and comprising a plurality of second network subscriber units and a second network sink node unit configured to wirelessly communicate with the second network subscriber units; the method comprising providing a dedicated connection between the first network sink node unit and a second network unit configured to communicate in the second network, whereby a one of the first network subscriber units is provided with a communication path via the first network sink node to the another second network unit.

54. (Currently Amended) A communications system comprising:

- a first network comprising a first sink node and a plurality of first communication terminals configured to wirelessly communicate with the first sink node;
- a second network geographically at least partly overlapping the first network and comprising a second sink node and a plurality of second communication terminals configured to wirelessly communicate with the second sink node;
- wherein the first sink node is further configured to operate as a second communication terminal for providing one of the first communication terminals with communications access to the second network.

55. (Previously Presented) A communications system as claimed in claim 54, wherein wireless communication in the first network is independent of wireless communication in the second network.

56. (Previously Presented) A communications system as claimed in claim 55, wherein wireless communication in the first network is in a different frequency band from wireless communication in the second network.

57. (Previously Presented) A communications system as claimed in claim 56, wherein the first network comprises a plurality of first network sink node units with which the first communication terminals are configured to wirelessly communicate.

58. (Currently Amended) A communications system as claimed in claim 57, comprising a plurality of a ~~dedicated~~ connections, each ~~dedicated~~ connection being between a respective first network sink node unit and a respective second network unit whereby a one of the first network communication terminals is configured to be provided with a communications access via the respective first network sink node to the second network.

59. (Currently Amended) A communications system as claimed in claim 58, comprising:

a third network geographically at least overlapping the second network and comprising a plurality of third network communication terminals and a third network sink node unit configured to wirelessly communicate with the third network communication terminals; and

a ~~dedicated~~-connection between a second network sink node unit and a third network unit configured to communicate in the third network, whereby a one of the second network communication terminals is configured to be provided with communications access via the second network sink node unit to the third network.

60. (Previously Presented) A communications system as claimed in claim 59, wherein wireless communication in the first network and in the second network is independent of wireless communication in the third network.

61. (Previously Presented) A communications system as claimed in claim 60, wherein wireless communication in the first network and in the second network is in a different frequency band from wireless communication in the third network.
62. (Previously Presented) A communications system as claimed in claim 61, wherein the second network comprises a plurality of second network sink node units with which the second network communication terminals are configured to wirelessly communicate.
63. (Currently Amended) A communications system as claimed in claim 62, comprising a plurality of ~~a dedicated~~ connections, each ~~dedicated~~ connection being between a respective second network sink node unit and a respective third network unit whereby ~~a one of the~~ second network communication terminals is configured to be provided with a communications access via the respective second network sink node unit to the third network.
64. (Previously Presented) A communications system as claimed in of claim 63, wherein the said communication is data communication.
65. (Previously Presented) A communications system as claimed in claim 64, wherein the said communication is packet data communication.
66. (Previously Presented) A communications system as claimed in claim 54, wherein the said communication uses an internet protocol.
67. (Previously Presented) A communications system as claimed in claim 54, wherein the said communication in the first network is radio communication.
68. (Previously Presented) A communications system as claimed in claim 54, wherein the said communication in the second network is radio communication.

69. (Previously Presented) A communications system as claimed in claim 60, wherein the said communication in the third network is radio communication.

70. (Currently Amended) A communications unit for operation in a communications system including a first network comprising a plurality of first communication terminals; a second network geographically at least partly overlapping the first network and comprising a second sink node and a plurality of second communication terminals configured to wirelessly communicate with the second sink node; wherein the communications unit is operable as a first sink node configured to wirelessly communicate with the first communication terminals and of operation as a second communication terminal for providing one of the first communication terminals with communications access via the communications unit to the second network.

71. (Previously Presented) A communications unit as claimed in claim 70, the wireless communication in the first network is being independent of wireless communication in the second network.

72. (Previously Presented) A communications unit as claimed in claim 71, the wireless communication in the first network being in a different frequency band from wireless communication in the second network.

73. (Previously Presented) A communications unit as claimed in claim 72, the first network comprising a plurality of first network sink node units with which the first network subscriber units are configured to wirelessly communicate.

74. (Currently Amended) A communications unit as claimed in claim 73, the communications system comprising a plurality of ~~a dedicated~~ connections, each ~~dedicated~~ connection being between a respective first network sink node unit and a respective second network unit whereby ~~a~~ one of the first network subscriber units is configured to be provided with a communication path via the respective first network sink node unit to another the respective second network unit.

75. (Currently Amended) A communications unit as claimed in claim 74, the communications system comprising:

a third network geographically overlapping the second network and comprising a plurality of third network subscriber units and a third network sink node unit configured to wirelessly communicate with the primary third network unit; and

a dedicated connection between a second network sink node unit and a third network unit capable of communication in the third network, whereby a one of the second network subscriber unit is configured to be provided with a communication path via the second network sink node unit to another third network unit.

76. (Previously Presented) A communications unit as claimed in claim 75, the wireless communication in the first network and in the second network being independent of wireless communication in the third network.

77. (Previously Presented) A communications unit as claimed in claim 76, the wireless communication in the first network and in the second network being in a different frequency band from wireless communication in the third network.

78. (Previously Presented) A communications unit as claimed in claim 77, the second network comprising a plurality of second network sink node units with which the second network subscriber units are configured to wirelessly communicate.

79. (Currently Amended) A communications unit as claimed in claim 78, the communications system comprising a plurality of a ~~dedicated~~ connections, each ~~dedicated~~ connection being between a respective second network sink node unit and a respective third network unit whereby a one of the second network subscriber units is configured to be provided with a communication path via the respective second network sink node unit to another third network unit.

80. (Previously Presented) A communications unit as claimed in claim 79, the said communication being data communication.

81. (Previously Presented) A communications unit as claimed in claim 80, the said communication being packet data communication.

82. (Previously Presented) A communications unit as claimed in claim 70, the said communication using an internet protocol.

83. (Previously Presented) A communications unit as claimed in claim 70, the said communication in the first network being radio communication.

84. (Previously Presented) A communications unit as claimed in claim 70, the said communication in the second network being radio communication.

85. (Previously Presented) A communications unit as claimed in claim 75, the said communication in the third network being radio communication.

86. (Currently Amended) A method for operating a communications unit in a communications system including a first network comprising a plurality of first communication terminals; a second network geographically at least partly overlapping the first network and comprising a second sink node and a plurality of second communication terminals configured to wirelessly communicate with the second sink node; the method comprising operating the communications unit as a first sink node configured to wirelessly communicate with the first communication terminals; and operating the communications unit as a second communication terminal for providing one of the first communication terminals with communications access to the second network via the first communication terminal.

87. (Currently Amended) A processor configured to execute a computer program at a communications unit, the communications unit operating in a communications system

including a first network comprising a plurality of first communication terminals; a second network geographically at least partly overlapping the first network and comprising a second sink node and a plurality of second communication terminals capable of wireless communication with the second sink node; the computer program being configured to cause the communication unit to operate as a first sink node capable of wireless communication with the first communication terminals and as a second communication terminal for providing the first communication terminals with communications access via the communications unit to the second network.

88. (Currently Amended) A controller for a communications unit operating in a communications system including a first network comprising a plurality of first communication terminals; a second network geographically at least partly overlapping the first network and comprising a second sink node and a plurality of second communication terminals capable of wireless communication with the second sink node; the controller being configured to cause the communication unit to operate as a first sink node capable of wireless communication with the first communication terminals and as a second communication terminal for providing one of the first communication terminals with communications access via the communications unit to the second network.

REMARKS

Claims 36-88 are pending in this application. Claims 36, 52-54, 70, and 86-88 are independent claims. Claims 36, 40, 41, 45, 52-54, 57-59, 63, 70, 74, 75, 79 and 86, 87, 88 are amended by this Amendment.

The Office Action dated May 17, 2007 rejected claims 36, 37, 52-55, 70, 71 and 86-88 as being anticipated by prior art under 35 USC 102(b), and rejected claims 38-51, 56-69 and 72-85 as being rendered obvious by prior art under 35 USC 103(a).

Anticipation Rejection

The grounds for the anticipation rejection of claims 36, 37, 52-55, 70, 71 and 86-88 is set forth in part 7 on pages 5-6 of the Office Action. Specifically, the rejection is based on the preferred embodiment shown in Figs. 2A and 2B and described at col. 4, line 45, to col. 5, line 25, of U.S. Patent No. 5,664,007 issued to Samadi et al. (this preferred embodiment hereinafter being referred to simply as "Samadi"). Applicants respectfully traverse the rejection at least because it fails to establish a prima facie case that Samadi includes each and every one of the combination of features recited in the rejected claims.

For example, independent claim 36 is directed to a communication system having a first network with a first network sink node unit and a second network with a second network sink node unit. It has been amended by this Amendment to recite the feature that "one of the first network subscriber units is configured to be provided with a communication path via the first network sink node unit to said second network unit." Similar amendments have been made to all of the other independent claims (see claims 52-54, 70, and 86-88). In other words, the actual communication path, and not merely the signalling and connection set-up, is handled on the paths between the networks in the amended claims.

This is a problem found in the prior art, including Samadi. The problem is solved by the claimed invention by having the connection between the first network sink node and a second network unit configured to communicate in the second network whereby one of the subscriber units is configured to be provided with a communication path via the first network sink node to said second network unit. This enables an overlapping

tiered network arrangement to be set-up whereby the sink nodes enable communication from and between the various tiered levels and thus enable the subscriber unit from one tiered level to communicate with nodes in different tiered levels via the network sink node unit in the communication terminal or subscriber unit layer.

Samadi discusses a method and an apparatus which provides for the continuation of communication calls as the user moves from the coverage area of one communication network to the coverage area of another communication network. In particular, it discusses a process of sending requests from a first network to a second network in order to reconnect calls or route a call via a second network where the call has originally been placed across the first network.

However, Samadi et al. does not describe nor teach the recited feature of a connection between the first network sink node unit and second network unit configured to communicate in the second network, whereby one of the first network subscriber units is configured to be provided with a communication path via the first network sink node unit to said second network unit. Although Samadi does have a handover process, the communication path is not maintained in the manner recited in the amended claims. Instead, the signalling path passes through the first network to the second network. In other words, it is only the connection set-up/context which is routed through the switches to the second network and not the actual communication path.

Obviousness Rejection

The grounds for the obviousness rejection of claims 38-51, 56-69, and 72-85 are set forth in part 9 on pages 6-10 of the Office Action. Specifically, the rejection states that the claims are rendered obvious by Samadi in view of U.S. Patent No. 6,185,413 issued to Mueller et al. Applicants respectfully traverse the rejection at least because it does not establish a *prima facie* case that the applied reference suggest each and every one of the combination of features recited in the claims.

The Mueller et al patent describes a mobile station for transmitting a mobile radio signal to a base station. The base station has a memory device in which a number of available applications are stored which can relate to different carriers. These can be mobile radio network systems or service providers within a single mobile radio network.

Based on these calculations, the most cost effective application for a desired transmission is selected.

However, the Mueller et al. patent does not disclose or teach either a connection between the first network sink node unit and a second network unit, or the feature discussed above in response to the anticipation rejection. It fails to disclose or teach the first sink node being arranged to operate over a second communications terminal for providing one of the first communication terminals with communications access via the sink node to the second network.

It is understood that the Mueller patent may not be relied upon for these features. But applicants respectfully submit there is suggestion or motivation for the proposed modification of Samadi in view of the Mueller patent as proposed in the rejection. Specifically, the response to Arguments in the Office Action asserts that the motivation to provide a customer with a number of different systems and providers from which to select service is "explicitly stated in the Mueller reference". However, applicants cannot find where this motivation would cause one of ordinary skill in the art to make the selective modification of Samadi proposed in the rejection. In other words, one would be motivated to simply use the embodiments disclosed in the Mueller patent rather than attempt some sort of hybrid of both Samadi and the Mueller patent as is apparently proposed in the rejection.

The Commissioner is hereby authorized to charge any additional fees necessary for the consideration of this Amendment, or any other fees required in connection with this application, to Deposit Account No. 10-0100 (Docket No. NOKIA.4013US).

Respectfully submitted,


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